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Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

Claims 1-33 (canceled).

34. (currently amended) An image processing apparatus provided in a host image forming apparatus amongst a plurality of image forming apparatuses, said image processing apparatus comprising:

a color conversion part performing color conversion among a as between the host image forming apparatus and another one of the plurality of image forming apparatuses, including a first printer; and a second printer; and

a plurality of color profiles whereby colors of images formed by the respective host image forming apparatus apparatuses may be made effectively approximate each other to those formed by other ones of the plurality of image forming apparatuses, through color conversion performed by said color conversion part with the use of the color profiles,

wherein said color conversion part [[uses]] using a color profile from amongst the color profiles provided in the host image forming apparatus to convert input color data, in a RGB color space, to converted color data, in a device-dependent [[CMYK]] RGB color space of said second printer host image forming apparatus, for reproducing colors obtained by said first printer by applying said input color data, each of said input color data and said converted color data corresponding to a same color in a predetermined device-independent color space which does not depend on apparatus types; and

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a tone conversion part converting the converted RGB color data to converted CMYK data and forwarding the converted CMYK data to a printer engine of the host image forming apparatus, the printer engine reproducing the colors corresponding to the converted RGB color data by mixing or blending CMYK color materials,

wherein the plurality of image forming apparatuses have respective different dither matrixes,

wherein the color profile [[being]] is generated by a process including:

- (a) producing, in a computer, color patch data by uniformly dividing a RGB color space;
- (b) obtaining color patches corresponding to the color patch data in an image formed by a first image forming apparatus of an apparatus type of said first printer;
- (c) measuring color of the color patches in the predetermined device-independent color space;
- (d) obtaining a relationship, for each color patch, between a first color space which depends on the apparatus type of the first printer and the predetermined device-independent color space, based on a measurement result of (c);
- (e) obtaining a relationship between the predetermined device-independent color space in an image formed by a second image forming apparatus of an apparatus type of said host image forming apparatus second printer and a second color space which depends on said apparatus type of said host image forming apparatus second printer; and
- (f) calculating a coordinate value in the second color space which depends on the apparatus type of said host image forming apparatus second printer for each color patch whereby color of an image formed by said host image forming apparatus second printer has a color difference which is effectively reduced from color of an image formed by said first printer,

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according to the relationship between the predetermined device-independent color space in an image formed by said host image forming apparatus second printer and the second color space which depends on the apparatus type of said host image forming apparatus second printer, obtained in (e),

wherein color in an image formed by said host image forming apparatus second printer using said device-dependent input color data is visually equal to color of an image formed by said first printer using said converted device-dependent color data.

35. (original) The image processing apparatus as claimed in claim 34, wherein:

 said plurality of color profiles are provided from actually measuring color of an image formed by one of said plurality of image forming apparatuses, and creating a color profile whereby color of an image effectively approximating the measured color is formed by another of said plurality of image forming apparatuses approximately equal thereto.

36. (original) The image processing apparatus as claimed in claim 34, wherein:

 said plurality of color profiles comprise color profiles whereby a color difference in a color space which does not depend on apparatus types between images formed by the image forming apparatuses may be made to effectively approximate each other.

37. (original) The image processing apparatus as claimed in claim 36, wherein:

 said color space which does not depend on apparatus types comprises any one of an LAB color space, an XYZ color space and an LUV color space defined by CIE.

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Claim 38 (canceled).

39. (currently amended) The image processing apparatus as claimed in claim 34 comprising a controller provided in ~~one of the plurality of the host~~ image forming apparatus apparatuses which forms an image having color which is made to effectively approximate color of image formed by another of said plurality of image forming apparatuses with the use of the color profile.

Claim 40 (canceled).

41. (original) The image processing apparatus as claimed in claim 34, further comprising a part selecting a color profile to be applied from among the plurality of color profiles.

42. (original) The image processing apparatus as claimed in claim 41, wherein:
a host computer which provides printing information to the image forming apparatus comprises said part selecting a color profile to be applied from among the plurality of color profiles.

43. (original) An image forming apparatus comprising:
the image processing apparatus claimed in claim 34; and
an image forming part which forms a visible image on a recording medium based on image information output from said image processing apparatus.

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Claims 44-47 (canceled).

48. (previously presented) The image processing apparatus of claim 34, wherein the image formed by the second image forming apparatus corresponds to the color patches produced in (a).

Claim 49 (canceled).

50. (currently amended) The image processing apparatus of claim 34, wherein a type of color material of the first printer is one of ink and toner and a type of color material of the second printer host image forming apparatus is the other of ink and toner.

51. (currently amended) An image processing apparatus provided in a host image forming apparatus amongst a plurality of image forming apparatuses, said image processing apparatus comprising:

a color conversion part performing color conversion as between the host image forming apparatus and other ones of the plurality of image forming apparatuses; [[and]]

a color profile,

said color conversion part using the color profile provided in the host image forming apparatus to convert input color data, in a RGB color space, to converted color data, in a device-dependent RGB color space of said host image forming apparatus, for reproducing by the host image forming apparatus colors obtained by another image forming apparatus applying said

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input color data, each of said input color data and said converted color data corresponding to a same color in a predetermined device-independent color space which does not depend on apparatus types;

a tone conversion part converting the converted RGB color data to converted CMYK data and forwarding the converted CMYK data to a printer engine of the host image forming apparatus, the printer engine reproducing the colors corresponding to the converted RGB color data by mixing or blending CMYK color materials,

wherein the plurality of image forming apparatuses have respective different dither matrixes, and

wherein the color profile having been is produced according to the steps of:

producing color patch data by uniformly dividing a RGB color space;

sending the color patch data to each of [[the]] a first printer and a second printer for printing color patch images corresponding to the color patch data by each printer;

measuring a color of the color patch images printed by the first printer in a device independent color space to obtain a first relationship between the color patch data and the color of the corresponding color patch images printed by the first printer;

measuring a color of the color patch images printed by the second printer in the device independent color space to obtain a second relationship between the color patch data and the color of the corresponding color patch images printed by the second printer; and

calculating the color profile using the first relationship and the second relationship;
~~wherein the color conversion part is configured to convert original color data to converted color data according to the color profile, the converted color data being sent to the second printer for printing a corresponding image having color that is visually equal to color of an image printed by~~

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~~the first printer corresponding to the original color data.~~

52. (currently amended) A method for ~~producing a color profile for performing a host image forming apparatus, amongst a plurality of image forming apparatuses, to perform~~ color conversion ~~as between the host image forming apparatus and other ones of the plurality of image forming apparatuses between a first printer and a second printer,~~ the method comprising the steps of:

providing in the host image forming apparatus a color profile generated by performing steps comprising:

producing color patch data by uniformly dividing a RGB color space;

sending the color patch data to each of ~~[[the]]~~ a first printer and a second printer

for printing color patch images corresponding to the color patch data by each printer;

measuring a color of the color patch images printed by the first printer in a device independent color space to obtain a first relationship between the color patch data and the color of the corresponding color patch images printed by the first printer;

measuring a color of the color patch images printed by the second printer in the device independent color space to obtain a second relationship between the color patch data and the color of the corresponding color patch images printed by the second printer; and

calculating a color profile using the first relationship and the second relationship;

[[and]]

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using the color profile for converting original provided in the host image forming apparatus to convert input color data, in a RGB color space, to converted color data, in a device-dependent RGB color space of said host image forming apparatus. for sending to the second printer for printing a corresponding image having color that is visually equal to color of an image printed by the first printer corresponding to the original color data reproducing by the host image forming apparatus colors obtained by another image forming apparatus applying said input color data, each of said input color data and said converted color data corresponding to a same color in a predetermined device-independent color space which does not depend on apparatus types; and

converting, by the host image forming apparatus, the converted RGB color data to converted CMYK data and forwarding the converted CMYK data to a printer engine of the host image forming apparatus, the printer engine reproducing the colors corresponding to the converted RGB color data by mixing or blending CMYK color materials,

wherein the plurality of image forming apparatuses have respective different dither matrixes.

53. (previously presented) The method of claim 52, wherein the color profile is calculated using the first relationship and the second relationship according to the steps of:

obtaining a reverse of the second relationship for determining input color data for sending to the second printer based on desired output color of images printed by the second printer measured in the device independent color space;

determining, using the reverse of the second relationship, corrected color patch data for sending to the second printer corresponding to the color of the color patch images printed by the

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first printer measured in the device independent color space; and

comparing the color patch data sent to the first printer to the corrected color patch data.

Claims 54-56 (canceled).

57. (currently amended) A computer readable medium tangibly embodying a program of instructions executable by a processor in a host image forming apparatus computer to perform a method for color conversion as between the host image forming apparatus and other ones of the plurality of image forming apparatuses, by between a first printer and a second printer using a color profile obtained by: , the method comprising the steps of:

producing color patch data by uniformly dividing a RGB color space;

sending the color patch data to each of the first printer and second printer for printing color patch images corresponding to the color patch data by each printer;

measuring a color of the color patch images printed by the first printer in a device independent color space to obtain a first relationship between the color patch data and the color of the corresponding color patch images printed by the first printer;

measuring a color of the color patch images printed by the second printer in the device independent color space to obtain a second relationship between the color patch data and the color of the corresponding color patch images printed by the second printer; and

calculating the color profile using the first relationship and the second relationship,

said method for color conversion comprising: [[; and]]

using the color profile for converting original provided in the host image forming apparatus to convert input color data, in a RGB color space, to converted color data, in a

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device-dependent RGB color space of said host image forming apparatus, for sending to the second printer for printing a corresponding image having color that is visually equal to color of an image printed by the first printer corresponding to the original color data reproducing by the host image forming apparatus colors obtained by another image forming apparatus applying said input color data, each of said input color data and said converted color data corresponding to a same color in a predetermined device-independent color space which does not depend on apparatus types; and

converting, by the host image forming apparatus, the converted RGB color data to converted CMYK data and forwarding the converted CMYK data to a printer engine of the host image forming apparatus, the printer engine reproducing the colors corresponding to the converted RGB color data by mixing or blending CMYK color materials.

wherein the plurality of image forming apparatuses have respective different dither matrixes.

58. (new) The image processing apparatus as claimed in claim 34, wherein the color profile used to perform the color conversion is selected from said plurality of color profiles in response to selection of said another one of the plurality of image forming apparatuses.

59. (new) The image processing apparatus as claimed in claim 34, wherein the color profile used to perform the color conversion is selected from said plurality of color profiles in response to designation of a type of said first printer in said another one of the plurality of image forming apparatuses.